

# Maryland Ave. Resurfacing Project & Bike Lanes

---

AUGUST 28, 2018

# Agenda

---

- Clayton Policies and Plans
- Project Grant Application
- Project History
- Options
- Schedule
- Project Design Determination

# Clayton Policies and Plans

---

- Complete Streets Policy

- Adopted in 2012
- Complete street elements shall be considered on projects. Elements include street and sidewalk lighting, pedestrian and bicycle safety improvements, access improvements (ADA), public transit facility accommodations, street trees, landscaping, drainage, and street amenities.

- Bikeable and Walkable Communities Plan

- Adopted in 2009
- Developed in conjunction with Brentwood, Maplewood, & Richmond Heights
- Health, Transportation/Environmental Impact, Economic Benefits, Sense of Community and Quality of Life identified as key benefits of plan.
- References data from Indiana, Pennsylvania, Florida and Iowa that shows a connected trail network can have a positive economic impact.
- Plan identifies “accommodation” (shared lanes) as recommended bikeway treatment for Maryland Avenue

# 2009 Plan Map



# Project Grant Application

---

- Project recommended for funding through East-West Gateway in the Missouri Transportation Improvement Plan (TIP) in late 2016
- Application was as a “preservation” project, which is typical for pavement resurfacing, and included shared lane markings (“sharrows”) and additional bike signage along the route
- Ordinance enabling execution of the agreement was adopted in May 2017
- Funding agreement executed with MoDOT for project in July 2017

# Project History

---

- Engineering design contract executed - August 2017
- Notice of survey letters mailed to properties on route - August 2017
- Open House - September 2017
  - Letters/email to properties along route, notice posted to City website
  - Gather public input prior to design (no options presented)
  - 4 attendees (per sign-in sheet)
  - 4 comment forms received
  - Full plan options developed and traffic impacts analyzed
- Open House - April 2018
  - Letters/email to properties along route, notice posted to City website, two Clayton Connection newsletters, Clayton Times Article
  - Bike lane and shared lane options presented
  - 6 attendees (per sign-in sheet)
  - 3 comment forms received
- BOA Discussion Session - May 2018
  - Update board on open house and cover presented options
  - BOA asked staff to explore additional options (including protected bike lanes)

# Project History (cont'd)

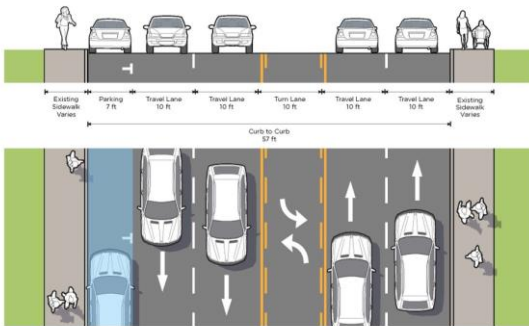
---

- BOA Meeting - June 2018
  - Questionnaire presented to BOA to aid in development of options
- BOA Discussion Session - July 2018
  - Matrix of additional options, impact, and preliminary costs presented
  - BOA narrowed list of options for further development and traffic analysis
- BOA Discussion Session – August 2018
  - Exhibits for additional options received (2<sup>nd</sup> week of August) and shared with property owners and businesses week prior to 8/14 BOA meeting.
  - Exhibits illustrated options under consideration for each segment
  - Q&A session held from 5-6pm, prior to BOA discussion session
  - Options, costs and traffic impacts presented
- BOA Work Session – August 2018
  - Further discussion of presented options

# Segment 1 (Gay to Forsyth)

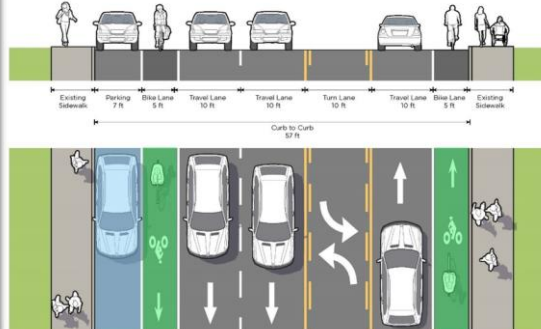


**Maryland Ave**  
Gay Ave to Forsyth Blvd  
Existing Conditions  
Looking East



Existing

**Maryland Ave**  
Gay Ave to Forsyth Blvd  
Proposed Bike Lanes  
Looking East

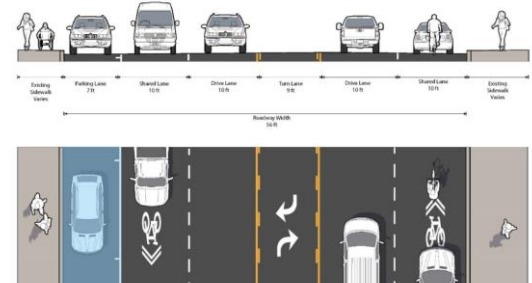


Bike Lanes (no buffer)

- Removes a EB travel lane (leaving one lane)
- Minimum width bike lane (5') next to minimum travel lane width
- **Does not remove parking**
- Traffic impacts (peak hour only)
  - 1500' que\* (backup to I-170)
  - 1 min. avg. delay at peak hour/ 4.5-6 min. delay for 10% traffic
  - Up to 3 signal cycles to clear Gay intersection

\*95% of vehicles will experience this que or shorter during peak hour, 5% will experience longer que

**Shared Lanes**  
Maryland Ave between Gay and Forsyth  
Looking East



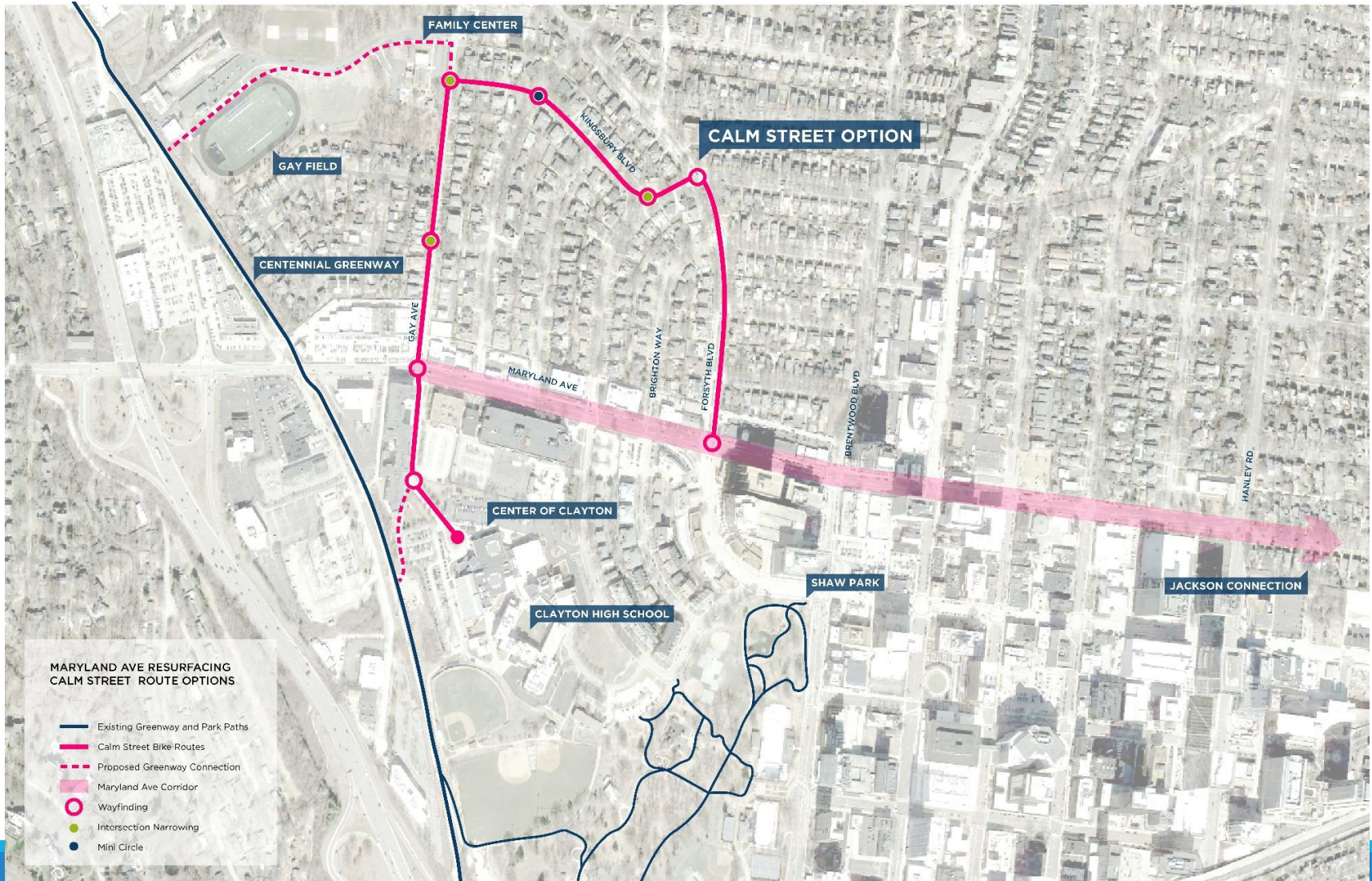
Shared Lane Markings

- Maintains existing travel lanes
- Maintains existing parking
- No significant impacts to traffic
- Off-route/neighboring street path identified with signage
- Included on original grant application and an option for all segments

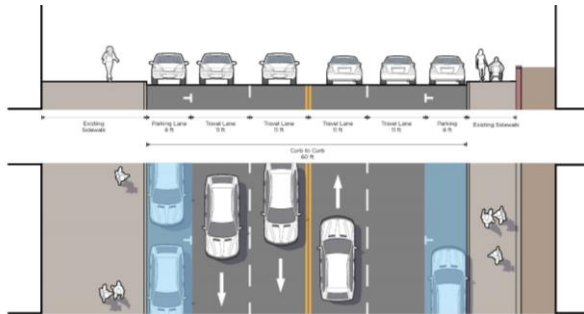
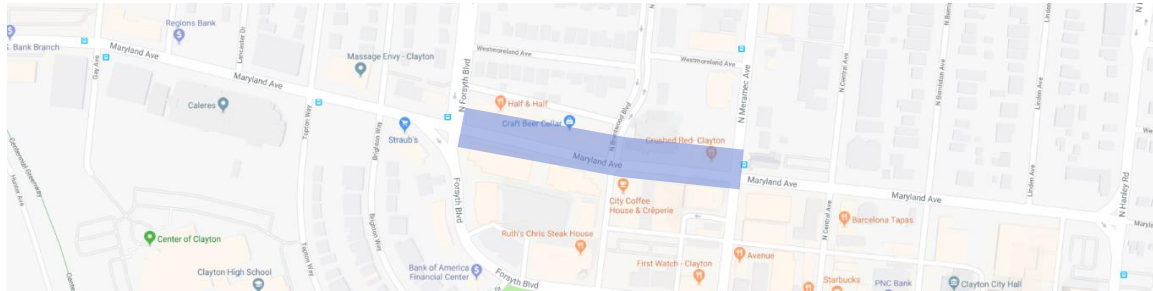


# Segment 1 (Gay to Forsyth)

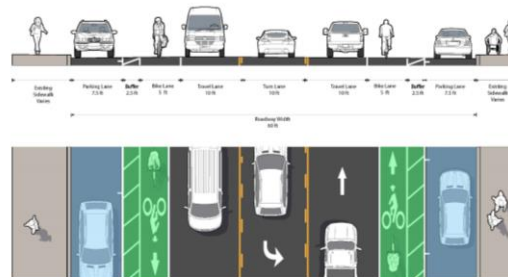
## Off Route Facility Options



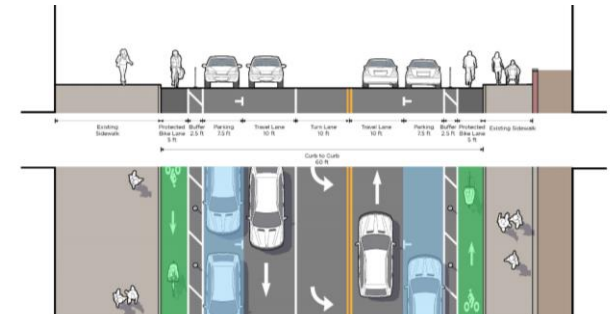
# Segment 2 (Forsyth to Meramec)



Existing



Buffered Bike Lanes



Protected Bike Lanes

- Removes 1 eastbound travel lane and 1 westbound travel lanes, adds center turn lane
- No physical barrier between bikes and vehicles
- Keeps bike lane at consistent location
- Future development less likely to impact
- **Does not remove parking**

- Removes 1 eastbound travel lane and 1 westbound travel lanes, adds center turn lane
- Creates physical barrier (parked cars) between bikes and vehicles
- Operational challenges for snow removal and street sweeping
- Removal of 1 parking space in this segment (5 along entire route)

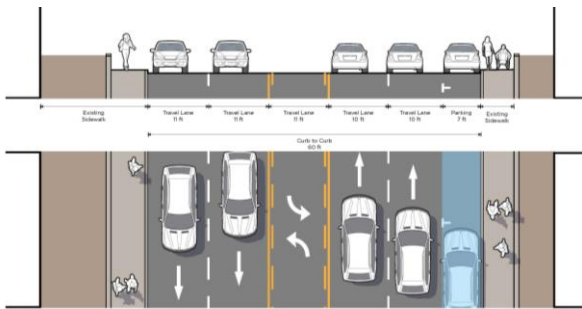
- Traffic impacts (peak hour only, applies to both options)

- 900' que\* length
- 1 min. avg. delay/ 2-3 min. delay for 10% traffic
- Up to 2 signal cycles to clear Forsyth & Meramec intersections

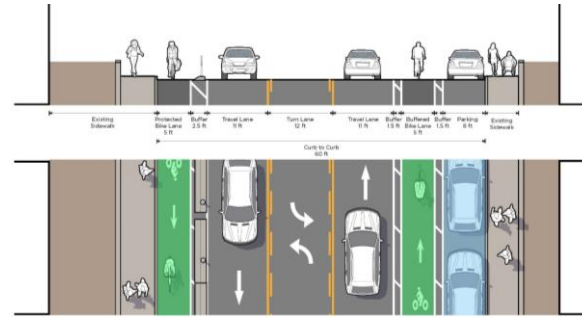
\*95% of vehicles will experience this que or shorter during peak hour, 5% will experience longer que



# Segment 3 (Meramec to Central)



Existing

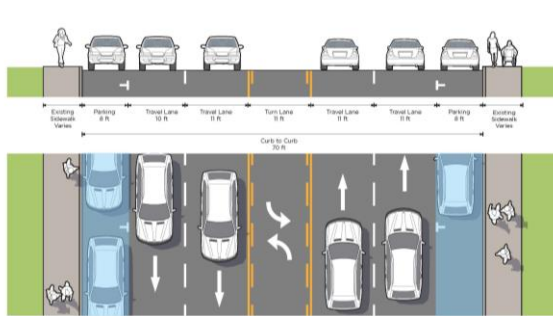


Protected or Buffered Bike Lanes

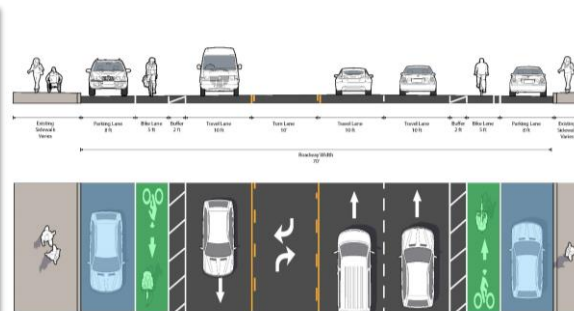
- Same considerations as segment 2, no parking on north results in modified section
- Does not remove parking
- Traffic impacts (peak hour only)
  - 850' que\* length

\*95% of vehicles will experience this que or shorter during peak hour, 5% will experience longer que

# Segment 4 (Central to Hanley)

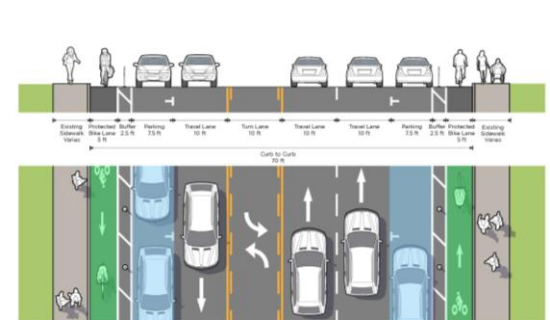


Existing



Buffered Bike Lanes

- Removes 1 westbound travel lane
- No physical barrier between bikes and vehicles
- Keeps bike lane at consistent location
- Future development less likely to impact this configuration
- **Does not remove parking**



Protected Bike Lanes

- Removes 1 westbound travel lane
- Creates physical barrier (parked cars) between bikes and vehicles
- Operational challenges for snow removal and street weeping
- Removal of 4 parking space in segment (5 along entire route)

- No significant changes to traffic (applies to both options)

# Considerations for Trials

- A simultaneous trial involving both travel lane reductions and the addition of bicycle lanes requires shifting of existing lanes, therefore standard striping would provide the most accurate trial.
  - The cost to remove and restripe the roadway and retime the signals is estimated to be \$110,000-\$175,000. (can vary based on methods used and if a treatment to pavement is needed). This cost is in addition to any costs associated with the initial install of bike elements (see table on right).

BICYCLE FACILITY OPTIONS - MARYLAND AVENUE	
MARYLAND ROAD SECTION	CONCEPTUAL COST ESTIMATE
Gay to Forsyth	
Bike Lanes (No Buffer)	\$25,000 to \$35,000
Shared Lanes	\$10,000 to \$15,000
Off-Route Bike Facility	
Option A (Includes intersection improvements)	\$70,000 to \$85,000
Option B (Pavement markings, signage and wayfinding only)	\$20,000 to \$30,000
Forsyth to Hanley	
Buffered Bike Lanes	\$80,000 to \$100,000
Protected Bike Lanes	\$160,000 to \$200,000

*Initial Bike Facility Install Costs*

- If constructed items are removed/alterd after the project is complete the City may be required to refund (pro-rated) that portion of the federal funds (pavement marking in this case, estimated at \$35-55k).
- For reimbursement of federal funds, the plan must be built to match approved final construction plans.

# Project Schedule

---

- Original Design Schedule
  - December 2017 – Public Involvement/Concept Plans
  - April 2018 – Preliminary Plan Submittal
  - May 2018 – Right of Way Plan Submittal
  - December 2018 – Final Plan Submittal
- Funding “obligation” required by September 2019 (final plans must be approved by MoDOT/FHWA and ready to bid to meet obligation requirement).
- Easement acquisition anticipated for any option selected.
- Current progress puts bidding in late 2019 with construction very likely pushed to 2020
- Extensions can be requested by City, but are not guaranteed.

# Project Design Determination

---

- Segment 1 (Gay to Forsyth)
  - ☐ Shared Lane Markings with off-route option (from grant application)
  - ☐ Bike Lanes (no buffer)
- Segments 2 & 3 (Forsyth to Central)
  - ☐ Shared Lane Markings (from grant application)
  - ☐ Bike Lanes (Buffered)
  - ☐ Bike Lanes (Parking protected)
- Segment 4 (Central to Hanley)
  - ☐ Shared Lane Markings (from grant application)
  - ☐ Bike Lanes (Buffered)
  - ☐ Bike Lanes (Parking protected)